

Summary of Comments and ADEC Responses
On the Underground Storage Tank Regulations, 18 AAC 78,
and Guidance
Public Comment Period Ending Date: February 11, 2002

Underground Storage Tank Regulations				
Comment Number	Individual/ Company		Comment	ADEC Response
1	16	General	Laboratory Approval Program and Benzene Issue: Currently the regulated value for Benzene in soil with possibility to leach to groundwater is set at 20 ppb. There currently, in the state of Alaska, are very few if any laboratories that can achieve this value with any certainty. Typically the client must sign a waiver stating that the laboratory is not responsible for the 20 ppb PQL not being met if certain dry weights are provided, etc. What is being done to provide that reliable laboratory services are available?	No modification made to regulation or Manual. Benzene PQL is set to 0.05 mg/L (50 ppb). Laboratory data indicate that this PQL is attainable.
2	42	General	I received a mail notification of the subject proposed changes of November 11, 2001, but have not been able to determine from the AK web site if there has been any further action of these changes since the comment period closed on January 3, 2002. Can you provide me with the current status? Any information will be greatly appreciated. Thank you.	No modification made. Emailed reply back with web site location.
3	41	General	Increasingly, the approach taken by the Department toward UST cleanups resembles the cumbersome Superfund process employed by the EPA for CERCLA sites. ARRC questions if this is the best approach to take for all sites. Mountains of paper generated for sites no bigger than a tank pit and with little fuel residue seem of questionable usefulness and cost.	No modification made. The UST cleanups currently follow what is in the UST Regulations, which has to be no more stringent than federal regulations. The UST Regulations currently reference 18 AAC 75 for cleanup levels only. Consistency between 18 AAC 75 and 18 AAC 78 requirements is a priority although staff use best professional judgement often to determine if a requirement may not be necessary for the particular site.
4	41	General	Greater technical foundations should be presented for many of the Department's proposed regulations. This is particularly true in discussions of cleanup levels. Specific comments below address this in greater detail	No modification made. The explanation on the cleanup levels was provided to the public on the ADEC web page on page 3 of the explanation WORD document.
5	33	.005	For 18 AAC 78.005 (e) which says The following USTs are exempt from the requirements of this chapter: (4) an emergency spill or overflow containment UST that is emptied within 24 hours after use; 24 hours seems somewhat unrealistic given the other clean up efforts that are likely to be taking place at the same time. Suggest changing to 48 or 72 hours.	No modification made. Replier does not understand that it is not the overflow in the environment that the owner is responding to in 24 hours. Rather, it is the time needed to clean out the auxiliary overfill tank connected to the main tank.
6	33	.017	18 AAC 78.017. OPERATIONS INSPECTION. (a) Except as provided in (b) and (c) of this section, the owner or operator of a UST system shall have each UST inspected at least every three years by an inspector who is certified under 18 AAC 78.410. The inspection must include, as applicable, examination, assessment, testing, and documentation of the <u>equipment, methods, procedures, operations, maintenance, and record keeping for [OF]</u> release detection equipment, spill and overfill prevention, and corrosion [DEVICES, AND CATHODIC] protection [EQUIPMENT].	No modification made. While this language may be common in the corrosion profession, it is not consistent with State or Federal UST regulations.

			<p>Comment: Suggest replacing with control. Corrosion control versus corrosion protection (not really trying to protect corrosion).</p>	
7	33	.017	<p>18 AAC 78.017. OPERATIONS INSPECTION. (f) The department will provide each new UST with a [STARTER] tag, decal, or notice within 30 days after receiving the registration. A tag will not be provided for a UST that is out of service. <u>A tag, decal, or notice is not required on a new UST installation until the department has issued the tag, decal, or notice to the owner or operator.</u></p> <p>Comment: This is confusing. The dept. will provide each new UST with a tag... Followed by a tag, decal is not required on new UST until it is issued. A tag is not required until a tag is issued, what does that mean.</p>	<p>Modification made to regulations. Agree that language is not intuitive and seems unnecessary. Suggest deleting the last sentence, so the section reads: 18 AAC 78.017. OPERATIONS INSPECTION. (f) The department will provide each new UST with a [STARTER] tag, decal, or notice within 30 days after receiving the registration. A tag will not be provided for a UST that is out of service. [A tag, decal, or notice is not required on a new UST installation until the department has issued the tag, decal, or notice to the owner or operator.]</p>
8	33	.025	<p>18 AAC 78.025. REQUIREMENTS FOR NEW UST SYSTEMS. (a) To prevent or detect a release caused by structural failure, corrosion, a spill, or an overfill while the UST is used to store petroleum, the owner or operator of a new UST shall meet the requirements of this section in addition to the requirements of <u>18 AAC 78.040 – 18 AAC 78.070</u> [18 AAC 78.040 - 18 AAC 78.075].</p> <p>Comment: Is petroleum defined somewhere to cover all the “things” that you want covered?</p>	<p>No modification made. Petroleum is defined in statute.</p>
9	33	.025 (f)(2)(E)	<p>18 AAC 78.025 (f)(2)(E) National Association of Corrosion Engineers Standard RP0169-96 [RP0169-92], <i>Standard Recommended Practice-Control of External Corrosion on Underground or Submerged Metallic Piping Systems</i>, reaffirmed September 1996; [REVISED, APRIL, 1992; AND]</p> <p>Comment: This is not really required since the “96” relates the year approved.</p>	<p>No modification made. Department of Law requires date of document, even though it may be implied in document number.</p>
10	33	.030	<p>18 AAC 78.030. REQUIREMENTS TO UPGRADE A UST SYSTEM.</p> <p>Comment: Are A though E to be read with an AND or an OR? So if the tank is not a stiP3 and integrity is verified through an above-mentioned process, I still have to use this document? This document is a fine reference, but it should not be a requirement. You are relying on the Corrosion Expert to do what is best to ensure integrity of the system.</p>	<p>Modification made to regulations. The reference is intended to be on option in upgrading a steel tank. The proposed placement of (C), (D) and (E) of this section would lead one to believe that the Steel Tank Institute standard would apply to any steel tank or that integrity assessment can be substituted using the STI standard, which is not the intent either. Therefore, a new section will be added to make (C), (D) and (E) clearer.</p> <p>(4) <u>STI-P3 steel tank may be upgraded to cathodic protection if the</u> <u>(A) tank can be verified by the Steel Tank Institute to have been constructed according to the Steel Tank Institute’s Sti-P3 specification and manual for external corrosion protection of underground steel storage tanks;</u> <u>(B) upgrade is performed by a person certified under this chapter in UST installation;</u> <u>(C) the upgrade is done in accordance with the Steel Tank Institute Recommended Practice for the Addition of Supplemental Anodes to STI-P₃® USTs (R-972-01, adopted by reference in 18 AAC 78.025; or</u></p>

11	33	.045	<p>18 AAC 78.045. OPERATION AND MAINTENANCE OF CORROSION PROTECTION.</p> <p>(c) A UST with a cathodic protection system must be inspected for proper operation by a cathodic protection tester or corrosion expert. An inspection under this subsection must be conducted by a person certified in <u>cathodic protection testing</u> under this chapter or by a <u>corrosion expert</u>. An inspection under this subsection must be conducted as follows:</p> <p>Comment: These two sentences say essentially the same thing. Is the term Corrosion Expert defined anywhere?</p>	<p>Modification made to regulations.</p> <p>ADEC agrees that the first and second sentences are redundant. Suggest the following:</p> <p>18 AAC 78.045. OPERATION AND MAINTENANCE OF CORROSION PROTECTION.</p> <p>A UST with a cathodic protection system must be inspected for proper operation by a <u>certified</u> cathodic protection <u>tester or corrosion expert</u>. [An inspection under this subsection must be conducted by a person certified in cathodic protection testing under this chapter or by a corrosion expert.] An inspection under this subsection must be conducted as follows: ...</p>
12	33	.045	<p>18 AAC 78.045 (e) A UST with an impressed current cathodic protection system must be inspected every 60 days to ensure that the equipment is running properly. <u>The owner or operator shall document the findings of the inspection. The owner or operator may use a form provided by the department to meet the requirements of this subsection.</u></p> <p>Comment: Do you ever say what you mean? You want the people to read and record the power supply (rectifier) output every 60 days. My fear is they will record it, but do nothing about zero output. How long do they have to “fix” a problem with the rectifier? It appears that it could be one to three years.</p>	<p>Modification made to regulations.</p> <p>ADEC agrees that there exists no practical advice to provide an owner/operator of a UST that has a zero reading on the rectifier. In order to address this concern, ADEC has proposed the following sentence to be added to .045 (e).</p> <p>18 AAC 78.045 (e) A UST with an impressed current cathodic protection system must be inspected every 60 days to ensure that the equipment is running properly. <u>The owner or operator shall document the findings of the inspection. The owner or operator may use a form provided by the department to meet the requirements of this subsection. If the inspection of the impressed current cathodic protection system indicates a reading of zero, the owner or operator shall notify the Department and take corrective action to investigate, and if necessary, correct the problem.</u></p>
13	34	18 AAC 78.045 (c)	<p>18 AAC 78.045 (c) – I do agree, if an individual is qualified to design a CP system, he/she should be qualified to test a systems performance.</p>	<p>No modification made.</p> <p>Thank you for your comment.</p>
14	34	18 AAC 78.045 (e)	<p>18 AAC 78.045 (e) – I agree with the intent, but disagree with a standardized CP test form. All sites are very different. You could request the recording of specific, basic information, such as: 1) the number of USTs, types, & sizes, 2) type of test equipment used, 3) basic site sketch with test point locations, 4) test results. Other than that, a standard form would, invariably, prove to be inadequate, overkill, or not applicable.</p>	<p>No modification made.</p> <p>Many states have standardized forms and most third party inspectors appreciate the standardization. ADEC staff disagrees that standardized forms are inadequate. In trying to capture spatial and analytical data and make it uniform and easy to read, a standardized form makes sense. It is important to report site-sampling information and to have a uniform method of reporting CP test results.</p>
15	33	.055	<p>18 AAC 78.055. REPAIRS ALLOWED</p> <p>Comment: Is a repair to the CP system considered a repair to the tank? If so the relevant NACE standard and CP worker/Corrosion expert ability to make/supervise etc the repair is not well defined.</p>	<p>No modification made.</p> <p>The term “repair” in UST regulations has a very narrow definition and only means to repair a tank or pipe that leaked not a corrosion protection system that failed.</p>
16	32	18 AAC 78.080 (j)	<p>18 AAC 78.080 (j) - The proposed regulation change is a good idea. I'm just wondering what steps the ADEC takes to assure that it is (or will be) complied with? We would all love tank owners to always have the ability to pay for any leaks but the fact is that many just don't (especially the Mom and Pop convenience stores). I dislike the thought of ADEC having to hold their hands to make them get insurance but maybe that's the only option? I'm thinking particularly of tank owners who go broke. How can these people maintain financial responsibility if they are bankrupt?</p>	<p>No modification made.</p> <p>Statute already requires this rule so ADEC is not adding anything new, just clarifying authority, and intent. It's another tool to discourage Temporary out of service tanks.</p>

17	34	18 AAC 78.080 (j)	<p>18 AAC 78.080 (j) – Although I agree with the intent of the proposed regulation change, I question how you can seek compliance. Many tank owners do not have the ability to pay for cleanups (especially small convenience stores). How do you address tank owners who declare bankruptcy? How do you address tank owners who pay for as much as they can before they declare bankruptcy?</p> <p>In addressing these problems, what is to be considered adequate for the small operator must be considered equally adequate for the large operator, as well.</p>	<p>No modification made.</p> <p>To have ADEC not enforce FR rules on temporary out of service tanks will not help. Compliance is achieved through periodic mass mailing of warning letters indicating that “Your tank is TOS, was not inspected and has no insurance: please remove it.”</p>
18	32	18 AAC 78.090	<p>18 AAC 78.090 - Many UST site assessments are conducted at sites where monitoring wells are already present. If these wells can be shown to provide adequate characterization of the ground water an additional monitoring well should not be required. This may already be the intention of the regulation, but it is not entirely clear as it is worded. FYI, the requirement to install a monitoring well in the excavation will not typically "save the owner/operator the expense of making a second trip" because well installation typically requires a drill rig, which would not be on-site during an excavation. I also do not agree that a monitoring well should be installed if all contaminated soil is successfully removed during the excavation. Usually this is not confirmed by laboratory results until several weeks after the excavation is completed. I don't think a monitoring well should be installed in such a case but rather installed at a later date as part of a follow up investigation. The expense of installing, developing, sampling and reporting for a single monitoring well is typically \$5,000. That's too much to expend unnecessarily.</p>	<p>Modification made to public draft : Section has been modified to eliminate the proposed monitoring well requirement. Amendment now reads as follows:</p> <p>(4) if groundwater or the seasonal high water table is known or suspected to exist at a depth from the surface to within five feet below the bottom of the tank, then [OR IF GROUNDWATER IS KNOWN OR SUSPECTED TO BE CONTAMINATED,]</p>
19	34	18 AAC 78.090	<p>18 AAC 78.090 – I disagree with the proposed requirement to install a monitoring well if contamination is “suspected” for the following reasons:</p> <ol style="list-style-type: none"> 1) A monitoring well need not be installed if all contaminated soil is successfully removed during the excavation, which is normally not confirmed by laboratory results for 1-3 weeks after excavation completion. 2) The requirement to install a monitoring well in the excavation would not "save the owner/operator the expense of making a second trip" as a drilling rig would become “required” on-site during an excavation. 3) Installing a well via an excavator-dug trench/test hole can, potentially, introduce contaminants into the ground water, where none were previously present. 4) Many UST site assessments are conducted at sites where nearby monitoring wells are already present. 5) The expense of installation, etc. for a monitoring well (usually about \$5K/well) should not be required without clear evidence of need. 6) If a well is installed and not needed, you now have decommissioning expenses added. 	<p>Modification made to public draft : Section has been modified to eliminate the proposed monitoring well requirement. Amendment now reads as follows:</p> <p>(4) if groundwater or the seasonal high water table is known or suspected to exist at a depth from the surface to within five feet below the bottom of the tank, then [OR IF GROUNDWATER IS KNOWN OR SUSPECTED TO BE CONTAMINATED,]</p>

20	38	18 AAC 78.090	18 AAC 78.090 - I disagree with the requirement to install a monitoring well in the excavation after a tank removal. It will lead to improperly designed wells which do not provide enough data to forgo an appropriate follow-up investigation. In some cases, where drilling may not be a viable option (remote sites) it may be suitable.	<p>Modification made to public draft: Section has been modified to eliminate the proposed monitoring well requirement. Amendment now reads as follows:</p> <p>(4) if groundwater or the seasonal high water table is known or suspected to exist at a depth from the surface to within five feet below the bottom of the tank, <u>then</u> [OR IF GROUNDWATER IS KNOWN OR SUSPECTED TO BE CONTAMINATED,]</p>
21	9	18 AAC 78.273	<p>18 AAC 78.273 – (letter summarized not verbatim)</p> <p>Where is the demonstration of need for these changes? Separate the issues of remedial performance and secondary contamination at the facility. If contamination is an issue it can be addressed in a number of ways. Develop closure standards and have a performance bond in place for the facility. Another option may be pollution liability insurance or demonstration of fiscal responsibility. Please have level playing field when it comes to remediation facilities and remediation being done for multiple sites. WE are not opposed to the bonding requirements as long as it is a requirement that is consistently and uniformly applied statewide. Address the issue of secondary contamination at a facility regardless whether it is a single, multi-source, on-site, or off-site facility.</p>	<p>Modification made to public draft of the regulations:</p> <p>The requirement for a bond is needed to address co-mingled soils at remediation facilities. Made modifications to clarify and address comments. Ensured that bond included only cleanup and secondary covered by pollution liability</p> <p>What is being done at AIA and Municipality of Anchorage, military bases, and single use facilities is covered in other parts of the cleanup regulations.</p>
22	20	18 AAC 78.273	<ol style="list-style-type: none"> 1. Is this for Category C Facility only? 2. Has the State of Alaska contacted any Insurance Underwriters as to what the cost of this bond will be? 3. How would the cost be determined? Fixed cost? Quantity? Contamination level? 4. This added expense (which I am sure will be excessive since we are talking insurance) is just another cost passed on to the client who is already concerned about the cost per ton. 5. Does this apply to a temporary set up at a client's location? 	<p>Reply give to commenter during public comment period.</p> <ol style="list-style-type: none"> 1.) no 2.) no 3.) The performance bond amount is based on the quantity of contaminated soil allowed at the facility and the cost per ton for treating the contaminated soil at the specific facility. (This has been added to the section to clarify the bond) 4.) This measure is required to protect the Responsible Party and be protective of the environment <p>No, the bond only applies to the stationary facilities handling multiple site contamination Category C and D.</p>
23	34	18 AAC 78.509 (f)	18 AAC 78.509 (f) - On behalf of grantees that I work with, I would disagree with the assertion that "too much time ... spent chasing down information" warrants that certain grantees "not be considered for future funding". Non-responsiveness can be due to many reasons like long-term illnesses, deaths, etc. They may have a wanted a grant, but personal problems demanded their attention more. The eligibility list has been shortened a lot and there is no valid reason to discount others.	<p>No modification made.</p> <p>The ADEC staff typically spend some time trying to make contact with these folks, but it is not fair to the others that are on the list that are also asking for grant funds.</p> <p>Each year ADEC staff has to face the legislature and let them know why we have not spent the grant money. ADEC has budgeted for this money and when ADEC staff can't get a replies from grantees the money is not spent. ADEC has limited funding and limited staff time.</p>
24	32	18 AAC 78.509 (f)	18 AAC 78.509 (f) On behalf of some grantees that I work with, I would like to respectfully disagree with the assertion that "too much time ... spent chasing down information" warrants that certain grantees "not be considered for future funding". Some grantees may have good reasons for not providing an approved work plan for two consecutive years but they should still be considered for future funding. They may not want a grant now but they may need one later. The eligibility list has already been shortened drastically and there is no good reason to close the door in people's faces prematurely.	<p>No modification made.</p> <p>The ADEC staff typically spend some time trying to make contact with these folks, but it is not fair to the others that are on the list that are also asking for grant funds.</p> <p>Each year ADEC staff has to face the legislature and let them know why we have not spent the grant money. ADEC has budgeted for this money and when ADEC staff can't get a replies from grantees the money is not spent. ADEC has limited funding and limited staff time.</p>

25	4	.615 (b)	<p>18 AAC 78.615 (b) and the Procedures Manual (section 4.7) - the requirement for a possible monitoring well will often be a heavy handed requirement. There are times when sampling the surface water from an excavation pit is a reasonable activity. Consider allowing surface water sampling or at least some less strict requirement for groundwater sampling - such as a well point, geoprobe, etc.</p>	<p>Modification made to public draft : Section has been modified to eliminate the proposed monitoring well requirement. Amendment now reads as follows:</p> <p>(4) if groundwater or the seasonal high water table is known or suspected to exist at a depth from the surface to within five feet below the bottom of the tank, <u>then</u> [OR IF GROUNDWATER IS KNOWN OR SUSPECTED TO BE CONTAMINATED,]</p>
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UST PROCEDURES MANUAL

Comment Number	Individual/ Company		Comment	ADEC Response
26	25	General Title UST Procedures Manual	Recommend new title to "Sampling And Analysis Procedures Manual."	No Modification made. Title will not be changed at this time.
27	25	General New sections UST Procedures Manual	Recommend that sampling protocols included in 18AAC75 and 78 are also included in this Manual and not provided in multiple locations.	No modification made. This will be worked on the next version of the regulations. We hope to merge various parts of 75 and 78 and update the Manual to include CS related issues.
28	25	General UST Procedures Manual	Where can I find an example ADEC data package to evaluate the reporting requirements for the labs?	No modification made. Requirements are in the UST Procedures Manual, 8.4.2 and Appendix C. Contact the State Chemistry Lab.
29	16	Page 11 2.10 UST Procedures Manual	UST Procedures Manual 2.10 Natural Attenuation effects more than just BTEX compounds.	No modification made. This is just a brief summary about natural attenuation. If you need more information, we suggest you refer to EPA's document referenced in this section of the Manual.
30	16	Page 29 3.1 UST Procedures Manual	3.1 What is the penalty if the completeness goal of 85% is not met? Also, completeness calculated based on what? Planned samples:collected samples, samples:flagged samples, samples:usable samples, samples:samples within holding time. It would be nice if guidance on what completeness goal is being referenced was provided.	Modification made to manual. If the 85% is not met, the project manager may request that further sampling be done. We have added the formula to the section.
31	25	Page 31 Table 1 Part A UST Procedures Manual	AK Method 102 and 103 and Table 1 Part A and B: There are multiple discrepancies between the text and the tables in the Procedures Manual. Neither is always correct. For example the Holding Time for a DRO water of 14 days. This appears to be an error.	Modification made to manual. Modified to accommodate edits.
32	25	Page 31 Table 1 Part A UST Procedures Manual	AK Method 102 and 103 and Table 1 Part A and B: Why are RLs and MDLs for DRO and RRO set so low when the clean criteria are much higher. Raising these MDL and RL requirements may make things easier for the labs.	No modification made. One measure of the laboratories proficiency is the ability to meet these requirements.
33	23	Page 31 Table 1 UST Procedures Manual	Page 31, Table 1: The heading of column 5 it states that clear glass may be substituted for amber glass sampling jars, except for metals. There is no scientific reason for metals to be sampled in amber jars. URS requests that this exception be omitted.	Modification made to manual. Modified to accommodate comments.
34	22	Page 31 Section 4 Table 1 Part A sampling procedures UST Procedures Manual	Table 1 Part A: Lists "No preservatives" for Soil AK102AAs and AK103AAs. It should list "Cool 4degC +/-2degC".	Modification made to manual. Modified to "Cool 4 degrees C +/- 2 degrees C"
35	22	Page 31 Section 4 Table 1 UST Procedures Manual	This Table also lists the preservation for metals in soil as "Cool 4degC +/-2degC". EPA methods in SW-846 do not require metals to be kept cool.	Modification made to manual. Modified by deleting preservation method in error.

36	22	Page 31 Table 1 UST Procedures Manual	Practical Quantification Limit requirements listed in Table 1 are above 18AAC 78 Table B1. Method Two limits for: Benzo(a)pyrene, Carbon Tetrachloride, Dibenzo(a,h)anthracene, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropene, Methylene Chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethylene, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, Arsenic, and Cadmium. Also note that although Mercury is listed in Table B1 the UST Manual Table 1 does not include Mercury.	No modification made to manual. More research on PQLs will be done in the next revision.
37	22	Page 31 Table 1 Part B UST Procedures Manual	Table 1 Part B: This table does not require water samples for metals analysis to be cooled to 4deg C +/-2C, while the soils must be kept cold. Metals in this Table from Lead through Vanadium do not list the 6 month holding time.	Modification made to manual. Modified as per comment suggestions.
38	22	Page 31 Table 1 Part A and Part B UST Procedures Manual	Both Table 1 Part A and Part B include a footnote 2 indicating that: “Method detection limits (MDL), specified in 40 CFR, Part 136, Appendix B, revised as of July 1, 1996, adopted by reference, are determined at the department’s chemistry laboratory.” When questioned at the December 11 th Workshop both Dr. Love and Dave Clover indicated that this regulation reference cannot be supported by the department’s laboratory. It is therefore possible that many of the listed maximum MDLs may not be readily attained using standard protocols. Actual laboratory data from several Approved laboratories should be used to determine validated maximum MDLs for all methods and matrices.	Modification made to manual. MDL’s for all methods/matrices have been requested from all approved UST Laboratories and the footnote no 2 in Table 1 A and B was modified. Further research on modifications needed for Table 1 for MDL to find attainable values using applicable methods will be completed in the next revisions done on the Manual.
39	22	Page 31 Table 1 UST Procedures Manual	Many of the PQLs in Table 1 list a required MDL of 1/10 th the PQL. This is an unusually stringent requirement. The Environmental Protection Agency, American Chemical Society, the State of Wisconsin, and other authorities indicate the Minimum Level (ML) of quantification of an analyte or PQL should be determined as 10 times the standard deviation of a low level spiked MDL study. An example of the ML and maximum MDL is given in EPA Method 1664 and supporting documentation. The references indicate a required maximum MDL of 1.4 mg/L Oil and Grease. The MDL is multiplied by 3.18 (equivalent to multiplying the standard deviation of the MDL study by 10) to yield a ML of 4.45 mg/L, subsequently rounded to 5.0 mg/L. A laboratory must meet the required maximum MDL of 1.4 mg/L or lower to perform NPDES monitoring analyses and report results with a ML (PQL) of 5 mg/L for a one liter sample. Other similar programs such as the Department of Defense’s: COE, and AFCEE require that the MDL be no more than ½ the PQL. Again, the Table 1 listed MDLs must be achievable by Approved labs or data generated by implementation of this program may not be legally defensible.	No modification made. The State of Alaska requires a high degree of confidence in values reported near the PQL, particularly when the PQL is near the MCL. ADEC will consider modifying and lowering the PQLs in the Table 1A and B by adjusting to a factor of 5 (PQL = 5 X MDL) in the next revisions of the Manual. MDL’s remain unchanged except where dictated by other reasons (metals).

40	22	Page 31 Table 2 UST Procedures Manual	Table 2 Determination of Sampling and Laboratory Analysis :This Table lists a requirement to run volatile chlorinated solvents and other additives listed in Table 2A for Gasoline, but not for Leaded or Aviation Gasoline. Since halogenated lead scavengers 1,2 Dichloroethane and Ethylene Dibromide are present in Leaded and Aviation Gasoline, these compounds may be present. Oxygenated volatile compounds such as MTBE, DIPE, ETBE, TAAE, TBA, and TAME may be present in Unleaded Gasoline for use in Anchorage or Fairbanks.	<p>No modification made. The Table 2 <u>Determination of Sampling and Lab Analysis for Soils and Groundwater</u> – requires volatiles for leaded and aviation gasoline, but not for unleaded gasoline.</p> <p>ADEC Contaminated Sites program does not require analysis of these oxygenated volatile compounds routinely for all samples. In Table 2A Indicator Compounds – additional fuel additives can be analyzed if required by the project manager on a case by case basis.</p> <p>ADEC may consider adding these compounds at some point in the future for these petroleum products.</p>
41	22	Page 31 Table 1 UST Procedures Manual	An additional problem encountered with data generated in compliance with the UST Manual is that the PQLs listed in Table 1 are often above 1/10 th the MCLs listed in 18 AAC 75 Tables B1, B2 and C. 18 AAC 75.340 (4)(k) indicates: “ For a cleanup conducted under methods two and three, a chemical that is detected at one-tenth or more of the Table B1 value set out in 18 AAC 75.341(c) or the Table B2 value set out in 18 AAC 75.341(d) must be included when calculating cumulative risk under 18 AAC 75.325(g).” For groundwater this criteria is outlined in 18 AAC 75.345(k): “ For a cleanup conducted under (b)(1) of this section, a chemical that is detected at one-tenth or more of Table C value must be included when calculating cumulative risk under 18 AAC 75.325(g).”	<p>Modification made to manual. Further research on modifications needed for Table 1 for PQLs and MDLS needs to be completed in the next revisions done on the Manual.</p> <p>18 AAC 75.340(k) has been amended: “For a cleanup conducted under methods two and three, a chemical that is detected at one-tenth or more of the Table B1 <u>ingestion and inhalation cleanup levels</u> [VALUE] set out in 18 AAC 75.341(c) [OR THE TABLE B2 VALUE SET OUT IN 18 AAC 75.341(d)] must be included when calculating cumulative risk under 18 AAC 75.325(g).”</p>
42	6	Page 34 & 54; Legend to Table 1 & 2 UST Procedures Manual	Manual; Page 34 & 54; Legend to Table 1 & 2: PAH now includes phenanthrene, but that compound is not listed in 75.341 tables. Was it called something else? Why test for it?	<p>Modification made to manual. This PAH has been removed from the list. It does not have a cleanup level.</p>
43	4	Page 41 4.51 UST Procedures Manual	Procedures Manual, section 4.5.1 – this section states, " characterizing stockpiled soil is necessary to determine whether treatment or disposal of the soil is needed, to assist with selection of treatment methods, and to establish baseline data for use in evaluating the effectiveness of treatment". All those statements are true. However, there are many instances where a site owner wishes to remediate the site and simply excavate the contaminated soil and have it thermally treated. In these instances there is no need to determine if the soil requires treatment - he has already decided it is based on PID readings, visual observation, and odor. There is also no need to select treatment methods - he already has a contract with a thermal unit and ADEC approval to transport the soil to the unit. There is also no need to establish baseline data - it will not be a bio-remediation where initial baselines are needed. After thermal treatment the soil either meets the cleanup levels or it doesn't and would be re-treated. Baseline information would not be of any interest. I suggest the current wording remain - since there are instances where initial data is needed. However, there should exist some mechanism for eliminating this requirement when it is definitely not providing any useful information. I have been involved in several projects where the sampling of the untreated pile was conducted for no useful	<p>No modification made. No proposed changes have been suggested for this section during this time. Discussions prior to work can take place and ADEC staff can determine if certain requirements for stockpiles can be waived on a case by case basis. Approval must be obtained from the lead ADEC project manager for the site.</p>

			reason except to comply with a regulation. The money spent on analysis would be better spent on treatment on those projects.	
44	16	Page 41 4.5.1 UST Procedures Manual UST Procedures Manual	<p>4.5.1 This section requires the characterization of stock piles. What waiver is available when the stockpile contamination is generally known and just being stockpile waiting for a burner to process the material. The characterization of a pile prior to treatment does not seem to be always needed. Why would ADEC be interested in the material in the stockpile if it is going to be treated? The scrutiny should fall on what is left in the hole and what comes out of the burner.</p> <p>Much time and funding is spent on characterizing a pile that is slated to be burned. The burner operator spends much less time and money characterizing the burned pile than goes into the first characterization. The funding from the first characterization could be better spent on either removing more contamination from the ground, remediating more material or both.</p>	<p>No modification made. No proposed changes have been suggested for this section during this time. Discussions prior to work can take place and ADEC staff can determine if certain requirements for stockpiles can be waived on a case by case basis. Approval must be obtained from the lead ADEC project manager for the site.</p>
45	4	Page 44 4.7 UST Procedures Manual	UST Procedures Manual (section 4.7) - the requirement for a possible monitoring well will often be a heavy handed requirement. There are times when sampling the surface water from an excavation pit is a reasonable activity. Consider allowing surface water sampling or at least some less strict requirement for groundwater sampling – such as a well point, geoprobe, etc.	<p>No modification made. Requirement for getting a groundwater sample from a monitoring well for a site assessment 18 AAC 78.090 has been eliminated.</p> <p>No proposed changes have been suggested for this section during this time.</p>
46	16	Page 45 4.7.2.1 UST Procedures Manual	4.7.2.1 Suggest that method 3 be presented first. The use of an electronic interface probe is much more accurate than the other methods. And allows the tracking of contamination plumes to greater resolution.	<p>No modification made. No proposed changes have been suggested for this section during this time. Will consider this comment at a future date..</p>
47	16	Page 54 Table 2 UST Procedures Manual	Table 2 Legend: PAH – Suggest presenting PAHs in the same order as they are presented in Table 1.	<p>No modification made. The listing of PAHs in legend of Table 1 and Table 2 are in the same alphabetical order.</p>
48	5	Page 54 Table 2 UST Procedures Manual	At present, for soil and groundwater samples collected for analyses of all fuel types the collection of naphthalene is required along with benzene, toluene, ethylbenzene, and xylenes (BTEX). According to Table 2 of the 18AAC78 procedures manual, analysis of naphthalene must be by EPA 8310 or 8270-Sims. For gasoline and JP-4, this entails running a rather expensive analysis, for quantification of one analyte. In discussions with analytical laboratories, it is apparent that quantification of naphthalene can be performed in the EPA 8021b analysis along with BTEX and in fact, according to the laboratory chemists, quantification is better than with the polynuclear aromatic hydrocarbons (PAH) methods. We suggest that analysis of naphthalene be allowed using Method 8021b. In addition we feel that Table 2 for determining what analyses are required for assessment based on fuel type, would be simplified if naphthalene were included as part of the standard 8021b run (i.e., let's have "BTEXN Constituents" on column 5 of Table 2 instead of just BTEX).	<p>No modifications made. ADEC approves of the use of 8021B. Further modifications of Table 2 will be done in future revisions of the Manual.</p>
49	32	Page 52 Section 6.3 Table 2A UST ProceduresMa	UST Procedures Manual, Section 6.3 Table 2 – This table needs to be completely revamped. Just start over. Why are S and GW listed for every single analyte? Why not just put a check mark in each box and say in the text that soil	<p>No modification made to Manual. All very good points. Thank you. Further modifications of Table 2 will be done in future revisions of the Manual.</p>

		nual,	and groundwater sampling is required? Also, if all soil samples are analyzed for a certain chemical, lets say lead, and all concentrations are below background concentrations why should ground water also be analyzed for lead? That would be a waste of money. Why not spell out "naphthalene only" in the rows for gasoline and JP-4 instead of specifying PAHs? Some people may not read footnote number 2 and may mistakenly spend too much on PAH analyses. Please include Jet B in the table. The footnotes are a nightmare. Please rewrite them for clarity. Why not separate the column called "metals, PCBs and solvents" into 3 different columns? That would avoid a lot of potential confusion. What exactly is meant by the term "solvents"? Which solvents? All volatile chlorinated solvents? Footnote number 1 makes no sense whatsoever. Footnote 7 is not fair if PAHs are not detected in the soil samples. Footnote 3 is redundant with Table 2A.	
50	34	Page 52 Section 6.3 Table 2A UST Procedures Manual	Section 6.3 Table 2 – Rewrite table. Get rid of all-inclusive waste oil row. Differentiate between dielectric oils, mineral oils, and waste crankcase oils; no need to test for GRO/BTEX and PCBs in used crankcase oil or mineral oil, or GRO/BTEX in dielectric oil. Why test for GRO & BTEX in kerosene? Spell out "naphthalene only" in the rows for gasoline and JP-4. Make separate columns for metals, PCBs and solvents. Define solvents, e.g. chlorinated solvents vs. non-chlorinated degreaser solvents. Get rid of PAH requirement in oils. Footnotes are out of control. Reword Footnote 7 to “Naphthalene (PAH) analysis for ground water is required if naphthalene (PAH) is detected in the soil.” Similar wording should apply to all analytes of interest.	No modification made.. Further modifications of Table 2 will be done in future revisions of the Manual.
51	38	Page 55 Section 6.3 Table 2A	Section 6.3 Table 2 - This table is difficult to use and should be replaced to clarify the requirements. There are some redundancies and almost as many footnotes as there are entries. It does provide the necessary info but could benefit greatly from stream lining.	No modification made. Further modifications of Table 2 will be done in future revisions of the Manual.
52	4	Page 61 Full Deliverables UST Procedures Manual	Procedures Manual - The requirement for submission of full data packages is overly cumbersome and unnecessary. Full submission is an item that does not equate to environmental protection but rather a CYA for the site owner. It should be up to the site owner to deal with any lab and data risk - not the State. The percentage of times where full submission would be helpful is very small - very very tiny. Do not require this.	Modification made to the Manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time.
53	5	Page 61 Full deliverables UST Procedures Manual	The proposed requirement for providing Level IV data packages with all data is exceedingly onerous. The overall surcharge to the environmental industry would be 10 to 15 percent of every laboratory sample with minimal benefit. If that money were to be spent, it would be better spent on collecting additional samples to better characterize the environmental conditions of the site. To the industry as a whole, the costs associated with this proposed requirement would be greater than the costs associated with re-collecting verification samples in the few instances where the quality of the data is in question. If the ADEC project managers were to review reports	Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time. The existing check sheet has been reformatted to be more useable. Electronic data generation (not the same as electronic data deliverables) submission is under review and may be added as an option at a later revision.

in a timely fashion, we would not be as likely to be in the position of needing to track down data from bankrupt laboratories. In short, this problem has been brought about by the ADEC and the ADEC should look to fix it themselves, rather than requiring consultants and RPs to spend extra money so that the ADEC can continue to sit on reports for years before reviewing them. In addition, the expense to ADEC for storage and management of the files would likely increase overall costs to both the State and clients alike. The reason that laboratories go out of business is purely financial; if they don't charge enough for their services, they don't make enough money to remain solvent. The owner of the site is ultimately responsible for hiring the laboratory. If the owner contracts with a laboratory, he should assume the risk of having to re-sample if that laboratory goes out of business. This cost should not be borne by other owners who have decided to use more reputable, albeit more expensive, laboratories that do not go bankrupt. In sum, if Client A decides to use a laboratory that goes out of business, Client A should pay for re-sampling if there is questionable data quality. To mandate that Client B provide a Level IV data package because Client A's lab went out of business is unfair. In essence, under the proposed regulation, there would be less incentive for a client (or consultant) to contract with financially solvent laboratories. This gives a leg up to the laboratories that are less financially solvent. This is not what the industry needs. We do not feel that the proposed requirement for Level IV packages is unwarranted in all cases. For example, final sampling performed for site closure after remedial action would be a valid use for a Level IV package. Review of chromatograms to assess biogenic interference could be another. However, a Level IV package for each quarterly water sampling event at a site would be a large waste of time, effort, and resources, not to mention paper. In cases where the Level IV package would be required, the State needs to get up to speed on electronic deliverable packages, as the volume of paper involved is large, and storage for both ADEC and the consultants (who must also keep a copy) would be onerous. In addition, legal statutes or interpretations of legal statutes would need to be changed to preclude the need for a paper copy of the Level IV packages.

54	24	Page 61 Full Deliverables UST Procedures Manual	UST Procedures Manual. Do not require full data packages to be submitted for all samples. The full data package would increase lab costs and consultant costs, and would only be used in rare circumstances. If the ADEC on a site specific basis has a real need for the full data package then ADEC should request the full data package. It is up to the responsible party to supply it (by going back to lab, acquiring the complete package initially, or if needed by resampling).	Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time
55	25	Page 61 Full Deliverables UST Procedures Manual	Please consider adding a review of a Level IV data package to the lab approval process and include evaluation against the method and lab SOP.	No modification made. This may be an option in the future, but currently there is insufficient staff at this time.

56	4	Page 61 Full Deliverable Package UST Procedures Manual	Procedures Manual - The requirement for submission of full data packages is overly cumbersome and unnecessary. Full submission is an item that does not equate to environmental protection but rather a CYA for the site owner. It should be up to the site owner to deal with any lab and data risk - not the State. The percentage of times where full submission would be helpful is very small - very very tiny. Do not require this.	Modification made to manual. See comment #39
57	34	Page 61 Full Deliverable Package UST Procedures Manual	<p>UST Procedures Manual Section 8.4.2 (a) (24)- I disagree with the requirement to provide chromatograms for every sample. This will be an unnecessary expense on the clients, the laboratories, and the consulting firms. This is viewed as an extreme expense for what would be a very underutilized information source. In addition, there are very few ADEC PMs with enough instrumental experience to accurately interpolate chroms. This interpolation becomes even more difficult when the chroms are from Different labs, different instruments, different columns, and different run times. The paper and/or a CD-ROM will serve to only increase costs for Owner/operators. The report size will increase substantially, along with filing needs; if CD/ROMs are used one would have to require a standard format and conversion from the numerous LIMS in use among the labs. I have provided chromatograms in reports several times, to substantiate findings, and have had no problems in retrieving information from the labs, even when it was from a previous year or more. It is my understanding that lab data is backed up and stored for at least five years. The threat of a lab going out of business is not sufficient enough to warrant the expense.</p> <p>ARRC is not sure why such extensive checklists for the laboratory and UST owner are required. Why generate a checklist for information that is readily available by looking at the report? If such extensive checklists are to be required, why is the report necessary? Duplicative reporting should be minimized, not expanded. The checklist could be useful to Department staff, however, in verifying that the required information is in the submitted report.</p>	Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time
58	41	Page 61 Full Deliverable Package UST Procedures Manual	It appears that CLP-type data packages are being proposed for all UST projects. This is not necessary, and will only add to the poundage of paper that no one will read. The typical laboratory report contains all the information required to evaluate the data, and requiring the laboratory to repeat the same information elsewhere is an unnecessary and costly burden. If the data packages were required, the regulated community and laboratories would be justified in asking for Department reviews for each and every data package. If the Department does not plan to actually read and review the packages, they should not be required. Further, if the Department wants to determine if the laboratories are meeting specific requirements, routine performance and records audits are the best way to accomplish the task.	Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time
59	40	General Data review/Validat ion.	I would like to see the UST Procedure Manual more clearly define what level of data review/validation is required for various data uses. It seems from the e-mail traffic below that there is confusion, even among ADEC	Modification made to manual. Clearer definitions will be completed in a later revision.

			<p>representatives. To my knowledge, the manual does not differentiate between data uses; yet, it appears that some ADEC representatives do. The basis for this should be defined in the manual so that the same rules apply to all. Please let me know if I have missed the boat on this and the information is already spelled out in the manual.</p>	
60	22	<p>Page 62 8.4.2(2)(26) UST Procedures Manual</p>	<p>Section 8.4.2(a)(26) Lists "pattern match narrative summary" as part of the data reported. This is no longer part of AK102 or AK103.</p>	<p>Modification made to manual. This has been removed.</p>
61	16	<p>Page 62 8.4.2 UST Procedures Manual</p>	<p>8.4.2 The requirement of submitting all chemical data as part of the report is appropriate.</p>	<p>Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time</p>
62	32	<p>Page 62 8.4.2 (a) (24) UST Procedures Manual</p>	<p>Section 8.4.2 (a) (24) I believe that the requirement to provide chromatogram traces for every sample will be an onerous burden on the laboratory, the consulting firm and the client. Providing the extra paper work and/or a CD-ROM would increase costs for owner/operators. The thickness of reports would be increased substantially as would the file cabinets needed to hold them. I can recall exactly two times that an ADEC project manager requested a "chrome" for a sample in the 4 years I've worked in this field. On both occasions, the requested info was easily obtained from the lab. I don't think the threat of a lab going out of business is sufficiently large to cause such a wasteful amount of extra paper. If chomes are needed, they should be requested in a timely fashion, not years later. Again, the efficiency of the whole system hinges largely upon ADEC reviewing reports in a timely manner. Don't make the owner/operators pay extra because some ADEC project managers are slow.</p>	<p>Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time</p>
63	38	<p>UST Procedures Manual Section 8.4.2 (a) (24)-</p>	<p>UST Procedures Manual Section 8.4.2 (a) (24)- I disagree with the requirement to provide chromatograms for every sample. It seems like a an unwarranted paper chase. I feel the labs do a good job storing chromatograms and have not had any problems recovering data when needed. Plus, all parties will have to handle two or three times and much lab related paper work.</p>	<p>Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time</p>
64	37	<p>UST Procedures Manual Section 8.4.2 Laboratory Reports</p>	<p>UST Procedures Manual Section 8.4.2 Laboratory Reports. The Department is requiring submission of hard copy or electronic copies of Level III Data Deliverable Packages with all reports. The Department's explanation for this requirement is to assure that all laboratory information is received in the event that a laboratory goes out of business. Alyeska disagrees with the Department's rationale for this requirement. It is the responsibility of the PRP to obtain adequate data for closure of the site. If the department is not satisfied with the deliverables provided with the report, the Department can request that additional data be provided. It is unduly restrictive and costly to provide a Level III data deliverable package with all reports. Alyeska suggests that Level III data deliverables only be required for demonstrating site closure. Assessment, field screening, and continued water monitoring sampling efforts should not</p>	<p>Modification made to manual. The inclusion of items in the data deliverable package that are typically archived will not be required at this time</p>

			require Level III data deliverable packages. Alyeska doubts that the Department has appropriate resources to manage the amount of information that is received. The proposed change is estimated to add 10 to 15% to the cost of laboratory analyses for work under the Contaminated Site Program. For projects with limited funding, this will reduce the funds available for assessment and remediation where more benefit can be obtained from the funding.	
65	22	Page 64 Table 3 UST Procedures Manual	Table 3 Example of Field Quality Control Summary lists the holding time for BTEX and Volatile Chlorinated Solvents as 14 days at 4C +/-2C while Table 1 indicates a 28 day holding time at less than 25C for methanol preserved samples. Metals preservation for soils and waters indicate a requirement for cooling to 4C +/-2C while Table 1 lists cooling for soil only. Again, SW-846 does not indicate this as necessary.	Modification made to manual. Modifications made to this Table 3 were completed in order to be consistent with Table 1.
66	16	Page 65 Table 3 UST Procedures Manual	Hold Time for DRO has not been updated to match the changes in Appendix D. Appendix D has lengthened DRO hold time to 14 days.	Modification made to manual. Modifications made and Table 1 update as comment suggests.
67	6	Page 69-70 UST Procedures Manual	Pages 69-70: Do the QC ranges listed reflect reality (real labs & samples)? Do you have any statistics on percentages of samples failing these "acceptance" ranges? What do we do when a lab result inevitably fails? AK102 surrogate recovery usually fails at moderate levels.	No modification made. Acceptance limits are based on recovery data collected from participating labs over about five years.
68	16	Page 72 Appendix A UST Procedures Manual	Appendix A Application for ADEC Qualified Personnel Changes to numbering on bottom of the page has dropped the number "9" on page 79. It is on page 80. Suggest limiting the numbers to make the form fit a single page.	Modification made to manual. Modification made on Appendix A.
69	34	Page 72 Appendix A UST Procedures Manual And titles	Appendix A. The name of the qualified person form has been changed from Storage Tank Program to Contaminated Sites Program; the name of the UST Procedures Manual has not been changed to Contaminated Sites Procedures Manual. Which parts of the procedures manual apply to contaminated sites? Should all the regulations be rewritten/reorganized for clarity? Needs more clarification/information	No modification made. Only the Alaska Methods are referenced in the Contaminated Site Regulations, 18AAC 75. Eventually, ADEC has plans to merge portions of 18AAC78 and 75 that are similar into one regulation package. The Manual will be rewritten also to cover both UST and CS "petroleum sites".
70	34	Page 72 Appendix A UST Procedures Manual And titles	On the Qualified Person form, field experience before receiving a degree should be allowed to count. People employed as field technicians, with numerous years of field experience, are currently working on their degrees. These people should not be penalized for a year, upon graduating. Please give them a 1:2 ratio of "field experience time counted" for "field experience before degree", at the minimum, if you can't give equal credit.	No modification made. This has rarely been an issue. ADEC has been interpreting the one year's worth of experience after the degree since '92 when we had Quality Assurance Program Plans requirements.
71	32	Page 72 Appendix A UST Procedures Manual	Appendix A. The name of the qualified personnel form has been changed from Storage Tank Program to Contaminated Sites Program yet the name of the UST Procedures Manual has not been changed to Contaminated Sites Procedures Manual. I think there will be confusion on the part of the regulated public as to which parts of the regulations apply to tanks and which to contaminated sites. Which parts of the procedures manual apply to contaminated sites now? This may not be the appropriate time to do this, but shouldn't all the regulations be reorganized to provide clarity on this? Is CS "borrowing" certain aspects of the UST	Modification made to manual. Any reference to a program has been taken off the Qualified Person form. Yes, staff overseeing contaminated non LUST sites that use certain portions of the Manual. More work will be done to clarify this in the next revisions of the Manual.

			regulations but not others? Please provide additional clarification of this	
72	22	Page 81 Appendix C UST Procedures Manual	Appendix C. ADEC Contaminated Sites Program Laboratory Data Report Check Sheet contains some issues that warrant comment: Column Performance: The methods no longer require the determination of the separation number. Optional: This section indicates the pattern match narrative is optional while the previously referenced section 8.4.29(a)(15) pattern match as information to be reported.	Modification made to manual. Edited Appendix C so that pattern match narrative is no longer required. The separation number will not be removed this revision. It is under review and may be removed at the next revision.
73	22	Page 81 Appendix C UST Procedures Manual	Appendix C. has check boxes for Spike/Spike duplicate and four boxes for Blank data, Reagent Blank, Method Blank, and Bottle Blank. The methods require a blank spike and blank spike duplicates. Field sample matrix spikes and spike duplicates are not a requirement. One combination Bottle, Method and Reagent blank should be considered adequate.	Modification made to manual. Appendix C has been revised to make method blanks mandatory and other blanks optional.
74	22	Page 81 Appendix D 6.5.2.3 page 83 Appendix D UST Procedures Manual	Appendix D. Alaska Series Laboratory Methods include several issues that should be addressed. Section 6.5.2.3 of AK101 specifies that: "The column must be capable of separating typical gasoline components from the surrogate and (optional) internal standard. "	No modification made. This will remain as a measure of required column performance.
75	4	Page 81 Appendix D AK 102 UST Procedures Manual	Procedures Manual - Thank you for finally recognizing naturally occurring organics. Yes - they do exist. And thank you for allowing integration to C 19, not C 25 in all instances. Any other method of removing the influence of natural organics from true petroleum is welcome.	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic.
76	16	Page 81 Appendix C UST Procedures Manual	ADEC Contaminated Sites Program Laboratory Data Report Check Sheet Could you please define 'LAN', I do not know the abbreviation.	Modification made to public draft manual. Eliminated the item as it is redundant. LAN means Lab Approval Number.
77	16	Page 83 Appendix D UST Procedures Manual	AK102 1.1.3 There has not been any changes in the regulations that would make these numbers usable that I found. Or will they be used interchangeably?	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic
78	16	Page 83 Appendix D UST Procedures Manual	AK 102 1.1.3 What documentation will the laboratory be required to provide to document that the analyst has correctly identified the sample as containing biogenic materials?	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic
79	16	Page 83 Appendix D UST Procedures Manual	AK 102: As presented it appears that the lab could claim interference and re-run the sample with C10-C19 resolution without documentation. The requantification of DRO from C10-C36 to C10-C19 will add extra cost to the laboratory. Who will pay for this work and will it be required by ADEC regulators?	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic
80	25	Page 83 Appendix D AK 102 and 103	AK Method 102 and 103 and Table 1 Part A and B: There are multiple discrepancies between the text and the tables in the Procedures Manual. Neither is always correct. For example the Holding Time for a DRO water of 14 days. This appears to be an error.	Modification made to manual. Modifications made to ensure consistency between Methods and Table 1.
81	25	Page 83 Appendix D AK 102 and 103	Why are RLs and MDLs for DRO and RRO set so low when the clean criteria are much higher. Raising these MDL and RL requirements may make	No modification made. One measure of the laboratories proficiency is the ability to meet these requirements.

		UST Procedures Manual	things easier for the labs.	
82	25	Page 83 Appendix D AK 102 UST Procedures Manual	AK Method 102: How will ADEC compare new data with shortened carbon range to Historical data where monitoring has been performed for several years?	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic
83	25	Page 83 Appendix D AK 102 UST Procedures Manual	What is the chance that ADEC project managers will except the argument for biogenic interference based on the new analytical procedure proposed? It appears that this recommendation was made with very little Testing performed and it may be premature to introduce the option of limiting the carbon range for DRO at this time.	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic
84	25	Page 83 Appendix D AK 102 and 103 UST Procedures Manual	Lab Deliverables Check sheet Requirements: The cost of requesting a Level IV data package in triplicate to include the cost of shipping these large data packages seems unreasonable. ADEC needs to reevaluate the cost and benefit. A pdf file is adequate for retaining a copy of the package and will save the cost of storage and data management. Hardcopy files that are stored for several years will fade and depending on the print quality may not be readable after several years.	The inclusion of items in the data deliverable package that are typically archived will not be required at this time. The existing check sheet has been reformatted to be more useable. Triplicate reporting is not typically required by DEC. Reports may be submitted as an electronic file.
85	25	Page 83 Appendix D AK 101 UST Procedures Manual	AK Method 101: If a reagent blank is not required, how will the labs check the methanol lot for impurities prior to the preservation/extraction of the samples?	No modification made. Placing methanol into water and purging the solution is considered to be a method blank. Purging pure methanol would be a reagent blank.
86	23	Page 83 Appendix D, AK 101-103 UST Procedures Manual	Appendix D, AK101, AK102, and AK103: The guidance allows for the update of the calibration curve with the response factor of the daily standard. This is generally an unacceptable practice (industry-wide) and is specifically not allowed under EPA SW-846 method 8000B section 7.7. URS also believes this practice is not allowed under other programs (e.g., ACOE or AFCEE) but does not have the specific reference at this time. URS requests that this allowance be deleted from the methods.	Modification made to manual. Modification made by removing the update of the calibration curve using the response factor from the daily standard from all methods.
87	23	Page 83 Appendix D, AK 101-103 UST Procedures Manual	Appendix D, GRO by AK101: Practical quantitation limits (PQL) are raised to 20 mg/Kg for soil and 100 ug/L for waters. Although these are still below the cleanup levels, when the lab MRLs (same as PQL) are elevated, the risk increases that the MRL will be above the regulatory level for certain samples. URS recommends that the PQLs listed in the methods remain at the lower levels. Since the labs should be achieving these already, there is no reason to elevate them.	No modification made to manual. Modifications will be considered in the next revisions of the Manual..
88	39	Page 83 AK 101 Section 10.2	AK101 section 10.2 still contains the requirement of annual MDLs, which is not found in AK102 or AK103. I like the succinct way quality control is addressed in AK102 and AK103. Can the same be done for AK101?	Modification made to Manual. The MDL section in AK101 has been edited to be consistent with AK102 and 103. The QC section of AK101 will be rewritten during the next revision to be consistent with the QC section of AK102 and 103.

89	41	Page 83 Appendix D AK 102 Biogenics UST Procedures Manual	UST Procedures Manual/Method AK102: Allowing integration to C18 or so is one method to limit the interference of biogenics, and is useful when Arctic diesel or kerosene is the target analyte. However, as ARRC demonstrated in a study of biogenic interference in DRO analysis in 1996, significant interference is encountered from approximately C-10 and higher carbons whenever peat or similar material is prevalent. Additionally, organic-laden silts are common near surface water bodies, and the determination of the biogenic fraction remains problematic. ARRC suggests that when significant biogenics are present in soil samples, a slurry of silica or similar material introduced in the extract may better remove interferents than silica gel columns, which tend to become saturated after very little biogenic adsorption occurs. Alternatively, the relationship between the DRO in AK102 and in methods for Organic Carbon determination should be evaluated.	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision.. Method development continues on this topic
90	5	Page 83 Appendix D AK 102 Biogenics UST Procedures Manual	While we feel that requantification of DRO from C10 – C19 to better assess biogenic interference is a good interim step, the department should continue to strive to find a more definitive method for elimination of biogenic interference in samples. I have heard of cases where the presence of peaty soil caused interference even into the gasoline-range organics (GRO) range, therefore elimination of C20 - C26 quantification may not adequately address all biogenic interference.	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision. Method development continues on this topic
91	23	Page 83 Appendix D AK 102 UST Procedures Manual	Appendix D, DRO by AK102: An allowance was added for integration to C19 for DRO when, in the opinion of the analyst, significant biogenic interference is present. This is too subjective and it is not appropriate for the analyst to make this judgment. URS recommends that this new allowance be deleted.	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision. Method development continues on this topic
92	23	Page 83 Appendix D AK 102 UST Procedures Manual	Appendix D, DRO by AK102: The PQLs are raised to 20 mg/Kg for soil and 800 ug/L for water. While these are still below the cleanup levels, when the lab MRLs (same as PQL) are elevated, the risk increases that the MRL will be above the regulatory level for certain samples. URS recommends that the PQLs listed in the methods remain at the lower levels. Since the labs should be achieving these already, there is no reason to elevate them.	Modification made to manual. No modification made to manual. Modifications will be considered in the next revisions of the Manual.
93	23	Page 83 Appendix D AK 102 UST Procedures Manual	Appendix D, DRO by AK102: The 7-day holding time for DRO waters is deleted in section 8.2. This should remain to be consistent with Table 1 and with EPA SW-846 guidelines.	Modification made to manual. The holding time has been changed to 14 days. This is listed in Table 1 and in Section 8.2 of AK102.
94	23	Page 83 Appendix D 10.4.2 AK 102 UST Procedures Manual	Appendix D, DRO by AK102: Section 10.4.2 - Only one LCS is specified. LCS and LCSD should be performed as previously required. If they are not, there will be no precision calculation for the data set. Table 1 of the method lists the relative percent difference (RPD) limit for the LCS/LCSD to be 20.	Modification made to manual. The method has been edited to eliminate this inconsistency. Precision can be obtained from surrogate information and from LFB's over several analytical batches.
95	23	Page 83 Appendix D AK 102 10.5.3 UST Procedures Manual	Appendix D, DRO by AK102: Section 10.5.3 - States there are no recovery limits for MS/MSDs. Recovery limits are needed in order to evaluate the data. URS recommends that either general guidelines be given (50-150%) or laboratory limits be used to evaluate the data.	No modification made. MS/MSD are now at the option of the client. It is up to the client to interpret results if these are analyzed.

96	23	Page 83 Appendix D AK 103 UST Procedures Manual	Appendix D, RRO by AK103: Table 1 of the text lists holding times, PQLs, etc., for RRO in water; however, the method only applies to soil. URS recommends that this inconsistency be corrected. Table 1 lists the PQL of RRO in water at 250 ug/L. The PQL of RRO should not be lower than DRO (800 ug/L).	Modification made to manual. The appropriate method should be for PAHs. Table 1 for waters will be edited the next revision to indicate the use of this method for this media.
97	23	Page 83 Appendix D AK 103 10.4.2 UST Procedures Manual	Appendix D, RRO by AK103: Section 10.4.2 - Only one LCS is specified. LCS and LCSD should be performed as previously required. If they are not, there will be no precision calculation for the data set. Table 1 of the method lists the RPD limit for the LCS/LCSD to be 20.	No modification made. Precision can be obtained from surrogate information and from LFB's over several analytical batches. If duplicate LFB's are analyzed the criteria listed in Table 1 is the requirement.
98	23	Page 83 Page 83 Appendix D AK 103 10.5.3 UST Procedures Manual	Appendix D, RRO by AK103: Section 10.5.3 - No MS/MSD recovery or RPD limits. Recovery limits are needed in order to evaluate the data. URS recommends that either general guidelines be given (50-150%) or laboratory limits be used to evaluate the data.	No modification made. MS/MSD are now at the option of the client. It is up to the client to interpret results if these are analyzed.
99	5	Page 83 Appendix D AK 102 -AK 103AA UST Procedures Manual	Get AK 101, 102, and 103 AA Methods finalized for use. These analyses can be extremely useful tools especially when dealing with old diesel releases in remote sites.	No modification made. Revisions to AK AA Methods are a priority for State Fiscal Year 2003. It will take two to three years to finish modifying the methods, implementing inter and intra laboratory studies to ensure that we get consistent results, and updating these Methods in the Manual for final adoption.
100	22	Page 83 Appendix D Page 5 UST Procedures Manual	Page 5 High levels of gasoline range organics will interfere with the separation of the surrogates and internal standards. It is not feasible to utilize a column that will consistently perform this separation. This problem is more severe for the GRO FID detector than the BTEX PID.	No modification made. Samples may have to be diluted and re-run to overcome this problem. Tangent skimming the surrogate should alleviate this problem.
101	22	Page 83 Appendix D AK 101 Section 9.3.5 UST Procedures Manual	Section 9.3.5 of AK101 States: "Best results are obtained by allowing the sample volatiles to equilibrate with the methanol for at least 48 hours before continuing with the analysis." Samples containing significant amounts of heavy oils can show low levels of volatiles if extracted for only 48 hours. If the sample is allowed to remain immersed in methanol for 28 days from sampling CT&E has observed results for volatiles as much as one hundred times the values obtained at 48 hours. In the presence of DRO and RRO near and above the MCLs data for volatiles may be biased low for methanol extracted samples	No modification made. This requirement will remain unchanged, but a project will be opened to investigate extraction times.
102	22	Page 83 Appendix D AK101 Section 9.11 UST Procedures Manual	Section 9.11 of AK101 determination of percent moisture is not consistent with AK102 and AK103. AK101 requires 5-10 g of sample to be weighed to 0.001 g and dried overnight at 100C+/-5. Then the sample must be desiccated, cooled weighed to 0.001 g and returned to the 100C oven for 2 hours. If, after desiccation and cooling the weight has changed by 4% the process must be repeated. Both methods AK102 and AK103 require that 5-10 g of sample is weighed to 0.01 g, and dried overnight at 110C+/-5. These methods do not require drying again for two hours.	Modification made to manual. All sections containing moisture content calculations and procedures have been edited for clarity and consistency.
103	22	Page 83 Appendix D AK 101 Section 10.9.2.1 UST Procedures Manual	Section 10.9.2.1 Stipulates that: "If surrogates are outside of established control limits, the following assessments and/or correction actions must occur:" C) Recalculate the data and/or reanalyze the extract if any of the above checks reveals a problem. D) Re-prepare and reanalyze the sample if none of the above resolves the problem.	Modification made to manual. This comment is noted and the method has been modified to include language which would differentiate between matrix effects and other causes of high surrogate recovery

			These requirements are not consistent with Section 10.6.1 "High recovery may be due to co-eluting matrix interference-examine chromatogram."	
104	22	Page 83 Appendix D AK 101 Page 6 section 10.6.4 UST Procedures Manual	<p>Page 6 Section 10.6.4 instructs: "If the surrogate recovery is outside established limits due to suspected matrix effects, GRO results must be flagged."</p> <p>The reanalysis specified in 10.9.2.1.D) should not be mandatory if matrix interference is indicated. Note there is no mention of a potential for low field surrogate recovery due to high moisture containing samples. Field surrogate recoveries that appear to be less than 50% often are indicated to be greater than 50% when moisture dilution of the methanol is considered.</p>	Modification made to manual. Language has changed to allow determination of a dilution factor for determining concentrations of analytes and surrogates.
105	22	Page 83 Appendix D AK 101 Figure 1 UST Procedures Manual	<p>Figure 1 of AK101 is referenced as an example of GRO integration from the peak start of C6 to the peak start of C10. These peaks are not labeled on the chromatogram. It is assumed the peak labeled GRO at 8.442 minutes is toluene, but is the peak at 28.875 minutes actually n-butyl benzene? Where are method-required surrogates such as 4-bromofluorobenzene or trifluorotoluene? Note that the baseline is drawn to cut off several minor peaks and is too high on the major peaks. Since there are no identified surrogates the appropriate baseline-baseline integration may not be confirmed.</p>	Modification made to manual. A new chromatogram will be submitted with the integration window markers indicated. This revision of the method allows an alternate surrogate. N-Butyl benzene was used.
106	22	Page 83 Appendix D AK 102 section 1.1.3 UST Procedures Manual	<p>Section 1.1.3 of AK102 allows for reprocessing of the data if the analyst believes biogenic interference is indicated. CT&E does agree that this practice may give more representative values of petroleum for samples contaminated with middle distillate fuels. For the environmental lab this method option can make efficient analysis and timely satisfaction of the client very difficult. Any project that may allow for this option will initially cause problems during the competitive bidding process. Some labs may include this option in the bid while others may not. One cannot know if biogenic contamination will be significant or if the levels of DRO will warrant reevaluation of the results on any proposed project. Additionally, will all ADEC managers accept this reintegration consistently and fairly?</p>	Modification made to public draft manual. The C19 option had been dropped for this revision. It is under review and may be added during the next revision. Method development continues on this topic
107	22	Page 83 Appendix D AK 102 Section 1.2 UST Procedures Manual	<p>Section 1.2 of AK102 Quantitation Limits lists a PQL for DRO in water at 0.8 mg/L while Section 1.3 indicates a Dynamic Range of 0.1 mg/L to 100 mg/L. This should be consistent.</p>	No modification made. PQL is a regulatory number. Dynamic range is a characteristic of a measurement system. One does not drive the other.
108	22	Page 83 Appendix D AK 102 Page 7 section 3.3 UST Procedures Manual	<p>Section 3.3 of AK102 indicates that: "The surrogate must be spiked into all calibration standards, continuing calibration standards, and calibration verification standards, and prior to extraction of all other samples and standards."</p> <p>Previous revisions of AK102 did not require the surrogates to be spiked into the calibration standards. Inclusion of the surrogates in the calibration standards could significantly bias the low-level calibration. The primary purpose of surrogates is to validate the extraction procedure. Method AK103 does not mandate surrogates in calibration standards and AK102 should not be changed to require this practice. CT&E calibrates the surrogates with a separate curve.</p>	Modification made to manual. The method was edited to remove this requirement.

109	22	Page 83 Appendix D AK 102 Section 3.12 UST Procedures Manual	Section 3.12 of AK102 defines the PQL as 10 times the MDL. As previously indicated this is unusually stringent. Actual MDLs by approved laboratories should be evaluated.	No modification made. Agreed. Data is being collected. Modifications if necessary will be done with the next revision of the Manual.
110	22	Page 83 Appendix D AK 102 Section 8.2 UST Procedures Manual	Section 8.2 lists the AK102 hold time for water as 14 days. This should be 7 days as per Table 1 Part B.	Modification made to manual. Table 1 Part B was corrected to reflect the change in AK102.
111	22	Page 83 Appendix D AK 102 Figure 1 UST Procedures Manual	Figure 1 of AK102 is an example chromatogram identified as Fuel Oil #2. Section 7.4.3 lists Diesel #2 as the required standard. Evaluation of the chromatogram by our staff leads us to believe that this product is not a #2 Diesel or a #2 Heating Fuel. The pattern is not consistent with standard #2 Diesel. It seems likely that this product may not meet the ASTM D975 distillation specification for a minimum temperature of 288C at 90% recovery. Additionally, the evidence of significant levels of the lighter fractions indicates this fuel may not meet the minimum viscosity limit of 1.9 cST at 40C for #2 Diesel. The standard appears to be #1 DF. If the o-terphenyl surrogate concentration were at the recommended 20 micrograms per ml then the DRO would appear to be below the PQL. Also note that the chromatogram does not show any trace before 3 minutes and therefore does not document that Methylene Chloride is resolved from the C10 as required by Section 9.2.2.1.	Modification made to manual. New chromatogram of diesel #2 will be supplied.
112	39	Page 83 Appendix D	Section 9.3.3 in AK102 and AK103 (but NOT in AK101) now cite a correlation coefficient criteria of 0.995 or better when using linear regression or quadratic fit. I would like to suggest that 0.990 be adopted to be consistent with section 7.5.2 (p. 21) of EPA method 8000B, and that these calibration options be offered in AK101 as well.	No modification made. 0.995 is reasonable and not inconsistent with method 8000, just more stringent. No change to the proposed language.
113	22	Page 83 Appendix D AK 103 Page 8 UST Procedures Manual	It is clear that AK103 does not address the extraction or analysis of water samples, and lists a PQL for soil only at 100 mg/Kg. Despite this Table 1 Part B lists a PQL for RRO in water at 0.25 mg/L and a MDL of 0.05 mg/L. Although Section 1.3 of AK103 lists an approximate range in the extracts of 10 mg/L to 200 mg/L CT&E does not believe that this can be demonstrated. Our low calibration point is 500 mg/L in methylene chloride.	Modification made to manual. AK103 isn't to be used for water samples. The appropriate method should be for PAHs. This will be reflected in the Table 1 in the next revision.
114	22	Page 83 Appendix D Methods Column Compensation UST Procedures Manual	During the meetings held in Anchorage by ADEC discussing the Aliphatic and Aromatic methods the issue of column compensation came up. DEC representatives indicated that this practice was acceptable. If so, this should be clearly stated in the methods. This practice may allow for significantly lower blanks and MDL values if laboratories are specifically allowed this blank baseline subtraction option.	No modification made. Column compensation is carried out with no solvent or analyte injected and only carrier gas in the column. This is not considered to be blank subtraction as referred to in the method.
115	22	Page 83 Appendix D Method Surrogates Recoveries UST Procedures Manual	CT&E would like to see comments on how surrogate recoveries are calculated when the surrogate is in the center of the hydrocarbon envelope, with graphic examples included in the method. Additional guidance on the use of valley-to-valley integration should be given. Are the integration start and end points for the surrogates projected to the forced	No modification made. A guidance document well illustrated with chromatograms will be posted on the web site.

			horizontbaseline?	
116	22	Page 81 Appendix C UST Procedures Manual	A final and most significant issue is the requirement for the Appendix C. Laboratory Data Report Check Sheet. In context this document appears to be for use by the Engineering Firm's data assessor to check the validity and completeness of the laboratory data package. Or will the completion of this checklist fall to the responsibility of the lab? Since all of the required information can be available in standard deliverable package the lab should not be required to perform a task that has been implemented to allow users to understand and validate the report.	No modification made. This checklist is only a list of what should be included in the data submitted to the department. There is no language mandating the inclusion of the checklist itself in the laboratory data package or reports
117	2	AK 101 1.1.2	change "boiling points greater than" to "boiling points slightly greater than"	No Modification made.
118	2	AK 101 1.3	change "approximate range is 0.50 to 2.000 µg/L" to "approximate range is 100 to 2.000 µg/L"	No Modification made Dynamic range can be lower than the PQL.
119	2	AK 101 2.5	Re. credit to M.J. Pilgrim - "You don't credit Sandy Mapes or me, so why state this?"	No Modification made
120	2	AK 101 3.2	change "mixture of unleaded, leaded, and premium" to "mixture of regular, plus, and premium"	Modification Made to Manual. Agreed.
121	2	AK 101 3.5	change "either bromofluorobenzene or trifluorotoluene" to "either bromofluorobenzene or ααα trifluorotoluene"	Modification Made to Manual. Agreed, change to ααα trifluorotoluene
122	2	AK 101 3.7	change "be used in the LFB" to "be used to spike the LFB"	Modification Made to Manual. Changed to "The CVS may be used as the LFB."
123	2	AK 101 3.7.1	Add - Instrument Blank: Give definition so it is clear that this blank is not included in analytical batch.	Modification Made to Manual. Defined blanks and made edits as recommended.
124	2	AK 101 3.7.2	Add - MCL - Define MCL. Perhaps this drinking water term is a bad choice for petroleum matching methods.	Modification Made to Manual. Eliminated use of MCL where possible and define.
125	2	AK 101 3.9	Change "must demonstrate and periodically maintain method detection limits" to "must demonstrate and annually update method detection limits" delete: "A method detection limit is a statistical quantity defined as the point where one has a 99% confidence they are not seeing either a false positive or a false negative. Near the MDL the confidence in quantification is very low." Comment - This is not true unless required reporting limit is less than 10 times the MDL! The mathematics and statistics associated with the MDLs are only related to detector peak areas that might result in identifying and quantifying the peak areas as target analytes. Nothing could possibly be implied by a zero or negative peak area (false negative).	Modification Made to Manual. Changed to "must demonstrate and periodically update method detection limits"
126	2	AK 101 4.4	change "analysis of a solvent blank or reagent water" to "analysis of instrument blank"	No Modification made When solvent blank is clean, instrument is clean. Instrument blank is a diagnostic tool to be analyzed at the discretion of the laboratory.
127	2	AK 101 6.5.3.1	Delete - "with a water column at least 3 cm deep. The gaseous headspace between the water column and the trap should have a total volume of less than or equal to 15 mL. In any case, comment - If you state this about 5-mL system a similar statement has to be made about 25-mL system. And should have a total volume of less than or equal --?? Else delete the verbiage about 15 mL.	Modification Made to Manual. Edited language regarding 5 ml purging vessel.
128	2	AK 101 7.1	change - "Reagent Water" to "Analyte - Free Water"; change "free from purgeable compounds" to "free from target compounds"	Modification Made to Manual. Only edited language to include interferences as well as analytes. The rest of the changes will not be done.
129	2	AK 101 7.3.2	change - "bromofluorobenzene and/or trifluorotoluene" to bromofluorobenzene and/or	Modification Made to Manual.

			<i>ααα</i> -trifluorotoluene"	Change to <i>ααα</i> trifluorotoluene
130	2	AK 101 8.1.2	Change "must accompany all sampling kits at a recommended ratio of 1 for every 10 samples collected" to "must accompany each shipping container." Comment or add - Trip blank analysis is not required if all samples in a shipping container are < MCL.	Modification Made to Manual. Agreed..
131	2	AK 101 8.2.8	Change "Trip blanks must accompany all sampling kits, at a recommended ratio of 1 for every 10 samples collected" to One trip blank must be included with each shipping container" Comment or add - The trip blank is not required if all associated samples are < MCL.	Modification Made to Manual. Agreed.
132	2	AK 101 9.8.2	change - "represented by no less than" to "represented by no fewer than"	Modification Made to Manual. Agreed.
133	2	AK 101 9.8.3	change "for individual volatiles is recommended" to "for individual BTEX compounds is recommended"	Modification Made to Manual. Deleted last line "A calibration concentration..."
134	2	AK 101 9.8.4	"Continuing calibration" - comment - Do you mean average?	Modification Made to Manual. Agreed.
135	2	AK 101 9.8.6	Percent formula - comment - Must be absolute value. change to $\frac{R_1 - R_2}{R_1} \times 100$	Modification Made to Manual. Agreed
136	2	AK 101 9.9.2.2	Change - "as a retention time window." to "in place of the standard deviation."	Modification Made to Manual. Agreed.
137	2	AK 101 9.10	change - "the sample batch" to "the analytical sequence"	Modification Made to Manual. Changed to "analytical batch".
138	2	AK 101 9.10.2	change - "demonstrate that the instrument is still in control" to "demonstrate that the analytical system is still in control"	Modification Made to Manual. Agreed.
139	2	AK 101 9.10.3	After "corrective action must be performed," - add - "and all affected samples reanalyzed."	Modification Made to Manual. Agreed.
140	2	AK 101 9.10.4	End of paragraph, add - "and all affected samples reanalyzed if the CCS is the ending CCS.	Modification Made to Manual. Agreed.
141	2	AK 101 9.10.6	change "Blanks should also be run" to "Instrument blanks should also be run"	No Modification Made. Application is for both water and soil samples, method blank demonstrates clean measurement system. Other blanks, appropriate to the matrix, are regarded as diagnostic and are at the discretion of the laboratory.
142	2	AK 101 9.10.9.4	Perform global replacement of "reagent water" with "analyte-free water."	Modification Made to Manual. Only defined reagent water as being free from target analytes and/or interfering compounds.
143	2	AK 101 9.11.2	Change "nearest 0.001g" to "nearest 0.01 g" - comment - it does not make sense to weigh to accuracy of 1 part in 5000 for moisture when accuracy of method is less than 1 part in 100. change "100±5°C" to either "105°C" or "105 ± 5°C"	Modification Made to Manual. Agreed
144	2	AK 101 9.11.3	change "nearest 0.001g" to "nearest 0.01g"	Modification Made to Manual. Agreed
145	2	AK 101 9.11.4	change "nearest 0.001g" to "nearest 0.01g"	Modification Made to Manual. Agreed
146	2	AK 101 9.12.2	Comment - Moisture (%) formula not mathematically correct. Change to $\frac{(A-C)}{(A-B)} \times 100\%$ Comment - Although computers typically calculate in the order you show in your equation.	Modification Made to Manual. Agreed
147	Rolly Grabbe 2	AK 101 11.3	"Appendix B was 0.5" - comment - 5 x 0.5 = 2.5 not 20. "0.01 mg/L" - comment - 5 x 0.01 = 0.05 mg/L not 100. "The PQL is defined as 5 times the MDL" - comment - Section 3.10 states 10 times.	Modification Made to Manual. Agreed

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